

AMENDED CLAIMS

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5 (11.03.05); original claims 2-9 replaced by amended claims 2-
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New PATENT CLAIMS 2-10

10 2. Speed-dependent pressure regulation for hydraulic pumps according to claim 1, characterized in that the radial bore (26, 62) comprises at least one of the following characteristics:

- (a) it is located in a conveyor wheel (5, 61) of said oil control pump either in direction of the centrifugal force or inclined to it;
- (b) at its extreme end, it is biased in predetermined angular positions of rotation of the conveying wheel (5, 61) by conveying pressure.

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3. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the differential pressure piston (20, 42, 79) comprises at least one of the following characteristics:

- (a) it is biased by conveying pressure through at least one pressure connection (22, 83) at one side, and at the opposite side by the conveying pressure reduced by the centrifugal pressure;
- (b) it is axially movable relative to the control piston (1) and transfers said additional force onto said control piston (41, 69) via a spring (43, 81).

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4. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the differential pressure piston (20, 42, 79) comprises a throttle chamber (97).

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5. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the control piston (1, 42, 69) comprises at least one of the following characteristics:

5 (a) it comprises a control spring (16, 72) for the differential pressure piston (42, 79) and a spring (43, 81) which acts in the same direction, the spring (43, 81), without a pressure force of said differential pressure piston (42, 79), being preferably force-lessly unstressed, while being limited in its force by the stop (46, 85) thereof with a maximum pressure force of said differential pressure piston (42, 79);

10 (b) it comprises a control groove (75) which, in control position, is overlaps slightly a pressure bore (76), on the one hand, and a relief bore (78) on the other hand.

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6. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the pressure connection to said differential pressure piston comprises at least one of the following characteristics:

20 (a) the pressure connection from the radial bore (26, 62) to said differential pressure piston (20, 42, 79) is effected only in predetermined angular positions of rotation of the conveying wheel (5, 61) through a transverse connection (28, 84) of a non-rotating journal bolt (29, 63);

25 (b) the pressure connection (22, 25) to said differential pressure piston (42) comprises a filter (30, 31);

30 (c) the pressure connection (22, 25) to said differential pressure piston (20, 42) comprises a throttle (50).

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7. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that, in the case of an oil regulating pump with an external teeth wheel, the control piston (69, 96) as well 5 as the differential pressure piston (79) too are located within conveying capacity adjusting means formed as a displacement unit (60) including a reset spring (67) in a spring chamber (68).

10 8. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the control piston (69) situated in said displacement unit (60) is in pressure connection with said spring chamber (68), and that preferably at least one of 15 the following characteristics is provided:

- (a) the pressure connection runs through a pressure pipe (72) which penetrates a cover (73) of said displacement unit (60);
- (b) said spring chamber (68) is adapted to be biased with oil pressure through a throttle bore (90) and by a solenoid valve (89);
- (c) said spring chamber (68) is pressure controlled by a pressure relief valve (91).

25 9. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the pressure, which acts in said chamber (66) onto said displacement unit (60), is enabled to be switched off, preferably by a solenoid valve (93).

30 10. Speed-dependent pressure regulation for hydraulic pumps according to any of the preceding claims, characterized in that the centrifugal pressure surface (48) of said differential pressure piston (42) is enabled to be pressure relieved by a solenoid valve (47).

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